

**IN THE CLAIMS**

The following is a complete listing claims with a status identifier in parenthesis.

**LISTING OF CLAIMS**

1. (Previously Amended) A method of providing authentication in a wireless communication system comprising the steps of:

transmitting a first message to a first system from an Interoperability/Interworking Function (IIF), the first message comprising a mobile identifier for a subscriber of the first and a second system indicator indicating that the subscriber is attempting to gain access to a second system that uses an authentication process different than an authentication process used by the first system, the IIF being a separate entity from the first and second systems;

receiving a second message from the first system at the IIF having shared secret data associated with the subscriber;

generating an expected response at the IIF to a unique challenge using the shared secret data and an encryption algorithm; and

transmitting the expected response to the second system from the IIF.

2. (Original) The method of claim 1, wherein the second system indicator includes at least one of the following: an electronic serial number set to a default or null value; a system capability parameter indicating that the subscriber is roaming in a GSM based wireless communication system; or a system access type parameter indicating that

the subscriber is attempting to gain access in a GSM based wireless communication system.

3. (Previously Amended) An logical network entity comprising:
  - means for transmitting a first message to a first system, the first message comprising a mobile identifier for a subscriber of the first system and a second system indicator indicating that the subscriber is attempting to gain access to a second system that uses an authentication process different than an authentication process used by the first system, the first system being different from the second system;
  - means for receiving a second message from the first system having shared secret data associated with the subscriber;
  - means for generating an expected response to a unique challenge using the shared secret data and an encryption algorithm; and
  - means for transmitting the expected response to the second system.

4. (Original) The logical network entity of claim 3, wherein the second system indicator includes at least one of the following: an electronic serial number set to a default or null value; a system capability parameter indicating that the subscriber is roaming in a GSM based wireless communication system; or a system access type parameter indicating that the subscriber is attempting to gain access in a GSM based wireless communication system.

5. (Previously Amended) A method of providing authentication in a wireless communication system comprising the steps of:

receiving a first message at a first system from an Interoperability/Interworking Function (IIF), the first message comprising a mobile identifier for a subscriber of the first and a second system indicator indicating that the subscriber is attempting to gain access to a second system that uses an authentication process different than an authentication process used by the first system, the IIF being a separate entity from the first and second systems;

determining shared secret data associated with the subscriber using the mobile identifier and the second system indicator; and

transmitting a second message from the first system having the shared secret data to the IIF for calculation by the IIF of an expected response.

6. (Original) The method of claim 5, wherein the second system indicator includes at least one of the following: an electronic serial number set to a default or null value; a system capability parameter indicating that the subscriber is roaming in a GSM based wireless communication system; or a system access type parameter indicating that the subscriber is attempting to gain access in a GSM based wireless communication system.